

Being Normal in a Z-Score World

Assignment

Name: _____ Class/Section: _____ Date: _____

ACORNS has just finished a ten-year project in which the average tail length of the entire rare Australian striped squirrel population was obtained. The normally distributed scores that were collected yielded some interesting results. Using the data collected, ACORNS now needs to analyze the results and answer questions that have eluded the squirrel research community for years.

Given: $\sigma = 1.23$ inches $\mu = 6.3$ inches

- A. Describe the characteristics of a normal distribution like that collected by ACORNS.**
(A sketch may help)
- B. The population standard deviation of 1.23 inches means that...**
- C. Famous zoologist Dr. Ipkus at ACORNS stumbled onto an Australian striped squirrel with a tail of 2 inches.**
- 1) What is this squirrel's z-score?
 - 2) What does this z-score tell us about this squirrel's tail length in comparison to the population?
 - 3) What proportion of squirrels has a tail longer than this squirrel?
- D. When looking at the entire population, what percent of squirrel tail lengths are:**
- 1) Greater than 6 inches
 - 2) Less than 3 inches
 - 3) Between 3 and 9 inches